Claims

[c1] 1.A method for forming an interconnect structure comprising:
applying a first metallization pattern on a dielectric layer, the first metallization pattern including at least one etch stop having a perimeter defining at least one etch stop opening;
using an adhesive to attach a protective cover sheet over the first metallization pattern and the dielectric layer;
aligning at least one mask opening with the at least one etch stop opening;
removing a first portion of the adhesive through the at least one mask opening;
removing the cover sheet;
using a second portion of the adhesive to attach at least one electrical device such that an active area of the at least one electrical device is aligned with the etch stop perimeter; and
curing the second portion of the adhesive.

[c2] 2.The method of claim 1 further including:
forming at least two vias through the dielectric layer to at least two device pads of the at least one electrical device;
applying a second metallization pattern, the second metallization pattern extending into the at least two vias to contact the at least two device pads; and
removing the dielectric layer over at least a portion of the active area of the at least one electrical device.

[c3] 3.The method of claim 2 wherein removing the first portion of the adhesive through the at least one mask opening comprises exposing the cover sheet and the first portion of the adhesive to actinic light.

[c4] 4.The method of claim 2 wherein removing the dielectric layer over the at least a portion of the active area of the at least one electrical device comprises forming a plurality of overlapping vias in the dielectric layer along the etch stop perimeter and removing the resulting via-surrounded portion of the dielectric layer.

[c5] 5.The method of claim 2 wherein removing the dielectric layer over the at least a portion of the active area of the at least one electrical device comprises laser

drilling through the dielectric layer along the perimeter of the at least one etch stop and removing the resulting surrounded portion of the dielectric layer.

[c6] 6.The method of claim 2 wherein the dielectric layer comprises a polymer film and wherein the adhesive comprises a polymer.

[c7] 7.An interconnection structure comprising:
a dielectric layer;
a first metallization pattern on the dielectric layer, the first metallization pattern including at least one etch stop having a perimeter defining at least one etch stop opening;
a cured adhesive on a portion of the dielectric layer, the adhesive not present in an area aligned with the at least one etch stop;
at least one electrical device being attached to the dielectric layer by the adhesive such that an active area of the at least one electrical device is aligned with the etch stop perimeter.

[c8] 8.A probe comprising:
at least one energy-oriented probe electrical device including an active area and at least two device pads;
a dielectric layer having an opening aligned with the active area of the electrical device;
an adhesive coupling the dielectric layer and a non-active area of the device;
at least two vias extending through the dielectric layer to the at least two device pads; and
a metallization pattern extending into the at least two vias to contact the at least two device pads to couple the electrical device pads to probe equipment.

[c9] 9.A method for fabricating an interconnection structure comprising:
applying an adhesive over a dielectric layer;
curing a first portion of the adhesive through at least one mask opening;
using a second portion of the adhesive to attach at least one electrical device such that an active area of the at least one electrical device is aligned with the first portion of the adhesive; and
curing the second portion of the adhesive.

[c10] 10.The method of 9 further including:
forming at least two vias through the dielectric layer and the second portion of the adhesive to at least two device pads of the at least one electrical device;
applying a metallization pattern, the metallization pattern extending into the at least two vias to contact the at least two device pads; and
removing the dielectric layer and the first portion of the adhesive over at least a portion of the active area of the at least one electrical device.

[c11] 11.The method of claim 10 wherein curing the first portion of the adhesive through the at least one mask opening comprises exposing the first portion of the adhesive to actinic light.

[c12] 12.The method of claim 10 wherein removing the dielectric layer over the at least a portion of the active area of the at least one electrical device comprises forming a plurality of overlapping vias in the dielectric layer at least partially overlying the first portion of the adhesive near a perimeter of the first portion of the adhesive and removing the resulting via-surrounded portion of the dielectric layer.

[c13] 13.The method of claim 10 wherein removing the dielectric layer over the at least a portion of the active area of the at least one electrical device comprises laser drilling through the dielectric layer along a path at least partially overlying the first portion of the adhesive and removing the resulting surrounded portion of the dielectric layer.

[c14] 14.The method of claim 10 wherein the dielectric layer comprises a polymer film and wherein the adhesive comprises a polymer.

[c15] 15.The method of claim 10 wherein the metallization pattern comprises a second metallization pattern and further including,
prior to applying the adhesive over the dielectric layer, applying a first metallization pattern on the dielectric layer, the first metallization pattern including at least one etch stop having a perimeter defining at least one etch stop opening,
wherein, during curing of the first portion of the adhesive through the at least

one mask opening, the at least one mask opening is aligned with the at least one etch stop opening.

[c16] 16.An interconnection structure comprising:
a dielectric layer;
a first portion of cured adhesive;
a second portion of cured adhesive;
at least one electrical device being attached to the dielectric layer by the second portion of cured adhesive such that an active area of the at least one electrical device is aligned with the at least one predetermined area defined by the first portion of cured adhesive, the first portion of the cured adhesive being adhesively attached to the dielectric layer and not adhesively attached to the at least one electrical device.

[c17] 17.The interconnection structure of claim 16 further including a metallization pattern on the dielectric layer, the metallization pattern including at least one etch stop having a perimeter defining at least one etch stop opening aligned with the first portion of cured adhesive.